

**Amendments to the Specification:**

Please replace paragraph [0164] with the following amended paragraph:

Equation 14 can be rewritten as a difference equation, as shown in Equation 15, which represents a linear time invariant discrete time system:

$$y[n] = -\sum_{k=1}^8 a_k y[n-k] + \sum_{k=0}^5 b_k u[n-k] \quad \text{Equation 15}$$

where  $y[n]$  is the digitised EEG signal,  $u[n]$  is a Gaussian white noise process and  $a_k$  and  $b_k$  are coefficients to be determined for a given EEG time series. More specifically,  $u[n]$  represents a sequence of normally (Gaussian) distributed uncorrelated random variables and in the context of the analysis herein is used to represent the driving input to the fixed order ARMA model. From a physiological perspective it corresponds to the input the cortex receives which is assumed to be so complicated to be indistinguishable from white noise.